

## I. AMENDMENTS

### IN THE CLAIMS

Cancel claim 35 without prejudice to renewal.

Please enter the amendment to claims 20, 26, and 32, as shown below.

1.-19. (Canceled)

<sup>1</sup> 20. (Currently amended) A method of screening for an agent that modulates capsaicin receptor function, the method comprising:

a) combining a candidate agent with a eukaryotic cell comprising a recombinant nucleic acid comprising a nucleotide sequence that encodes a biologically active capsaicin receptor polypeptide, which nucleotide sequence is operably linked to a promoter, wherein said capsaicin receptor is encoded by a polynucleotide that hybridizes under stringent hybridization conditions to the complement of a polynucleotide having the sequence set forth in SEQ ID NO:1, and wherein the capsaicin receptor polypeptide is expressed on the cell surface; and

b) determining the effect of said agent on capsaicin receptor function.

<sup>2</sup> 21. (Previously presented) The method of claim <sup>1</sup>20, wherein said determining is by measuring capsaicin receptor-mediated increase in intracellular concentration of a cation.

<sup>3</sup> 22. (Previously presented) The method of claim <sup>2</sup>21, wherein the cation is selected from the group consisting of calcium, magnesium, potassium, cesium, and sodium.

<sup>4</sup> 23. (Previously presented) The method of claim <sup>2</sup>21, wherein the cation is calcium.

<sup>5</sup> 24. (Previously presented) The method of claim <sup>1</sup>20, wherein said determining is by measuring a capsaicin receptor-mediated electrophysiological response.

<sup>6</sup> 25. (Previously presented) The method of claim <sup>5</sup>24, wherein the electrophysiological response is an inward cation-specific current.

- 7 ~~26~~. (Currently amended) The method of claim ~~24~~<sup>5</sup> [[23]], wherein the response is measured using a fluorescent voltage-sensitive dye.
- 8 ~~27~~. (Previously presented) The method of claim ~~20~~<sup>1</sup>, wherein said determining is by measuring blocking the activity of a capsaicin receptor antagonist.
- 9 ~~28~~. (Previously presented) The method of claim ~~27~~<sup>8</sup>, wherein the capsaicin receptor antagonist is selected from the group consisting of capsazepine and ruthenium red.
- 10 ~~29~~. (Previously presented) The method of claim ~~20~~<sup>1</sup>, wherein said determining is by measuring blocking the activity of a capsaicin receptor agonist.
- 11 ~~30~~. (Previously presented) The method of claim ~~29~~<sup>10</sup>, wherein the capsaicin receptor agonist is selected from the group consisting of resiniferatoxin and capsaicin.
- 12 ~~31~~. (Previously presented) The method of claim ~~20~~<sup>1</sup>, wherein said determining is by measuring capsaicin receptor-mediated apoptosis.
- 13 ~~32~~. (Currently amended) The method of claim ~~20~~<sup>1</sup>, wherein said cell further comprises a reporter gene operably linked to a calcium inducible promoter, and wherein said determining is by measuring calcium-induced ~~reporter gene~~ expression of the reporter gene.
- 14 ~~33~~. (Previously presented) The method of claim ~~20~~<sup>1</sup>, wherein the cell is selected from the group consisting of an amphibian oocyte, a mammalian cell line, and a cultured neuron.
- 15 ~~34~~. (Previously presented) The method of claim ~~20~~<sup>1</sup>, wherein the capsaicin receptor is a mammalian capsaicin receptor.

35. (Canceled)